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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/640,625	08/12/2003	Jeffrey Rees	10017133-1	1130

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HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

PANTOLIANO JR, RICHARD

ART UNIT	PAPER NUMBER
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2194

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/640,625	REES ET AL.	
	Examiner	Art Unit	
	Richard Pantoliano Jr	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 15-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20070103</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is filed in response to amendments filed on **3 January 2007** for Application# **10/640,625**. **Claims 13 and 14** have been cancelled and **Claims 1-12 and 15-23** are currently pending and have been considered below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 20 and 23** are rejected under 35 U.S.C. 102(b) as being anticipated by Hunt (US Pat: 6,263,491).

4. **As per Claim 20**, Hunt discloses the invention substantially as claimed including a system for monitoring a response time of a transaction performed by a COM object, the system comprising at least one monitoring agent to intercept requests for creating at least one COM object (Col 37, Line 61 – Col 38, Line 57) and generates a wrapper, wherein said wrapper object:

a) implements a universal interface having a plurality of virtual functions (Col 8, Lines 22 – 49, Figure 3; Col 45, Line 63 – Col 46, Line 30 and Figure 17)(The universal interface is the virtual function table of the wrapper interface); and

b) each function is indexed by a number corresponding to an index number of a method associated with an interface of said requested COM object (*Col 8, Lines 22 - 49 and Figure 3*) (*As disclosed on Page 39, Lines 5-19 of Applicant's disclosure, the functions of the interfaces associated with a COM object are inherently indexed. The standardized binary format of the COM virtual function table allows for this*).

5. As per **Claim 23**, Hunt discloses the invention substantially as claimed including a computer readable medium storing instructions for performing a method of instrumenting a COM object invoked by a client, the instructions comprising:

a) instructions for intercepting a request from the client (*Col 45, Lines 46-62*);

b) instructions for generating a wrapper object corresponding to said requested COM object (Hunt, *Col 45, Lines 46-62*), said wrapper object implementing a universal interface having a plurality of virtual functions (*Col 8, Lines 22 – 49, Figure 3; Col 45, Line 63 – Col 46, Line 30 and Figure 17*)(*The universal interface is the virtual function table of the wrapper interface*) each indexed by a number corresponding to an index number of a method associated with an interface of said requested COM object (*Col 8, Lines 22 - 49 and Figure 3*) (*As disclosed on Page 39, Lines 5-19 of Applicant's disclosure, the functions of the interfaces associated with a COM object are inherently indexed. The standardized binary format of the COM virtual function table allows for this*); and

c) instructions for providing said client with a reference pointer to said wrapper COM object (*Col 45, Lines 46-62*).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-12, 15-19, 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunt (US Pat: 6,263,491) in view of Burdick (US Patent: 6,041,352).

8. As per **Claim 1**, Hunt discloses the invention substantially as claimed including a method of instrumenting a COM object invoked by a client for performing a selected business logic, comprising:

a) intercepting a request from the client for creating said COM object (Col 45, Lines 46-62);

b) generating a wrapper object corresponding to said requested COM object (Col 45, Lines 46-62), said wrapper object implementing a universal interface having a plurality of virtual functions (Col 8, Lines 22 – 49, Figure 3; Col 45, Line 63 – Col 46, Line 30 and Figure 17)(The universal interface is the virtual function table of the wrapper interface) each indexed by a number corresponding to an index number of a method associated with an interface of said requested COM object (Col 8, Lines 22 - 49 and Figure 3) (As disclosed on Page 39, Lines 5-19 of Applicant's disclosure, the

functions of the interfaces associated with a COM object are inherently indexed. The standardized binary format of the COM virtual function table allows for this);

c) providing said client with a reference pointer to said wrapper COM object (Col 45, Lines 46-62); and

d) upon invocation of a method associated with an interface of the requested COM object by the client, invoking a function of said universal interface of the wrapper object indexed by a number corresponding to an index number of said requested method, wherein said invoked function's executing instructions corresponding to said requested method (Col 45, Lines 46-62 and Figure 17).

9. While Hunt further discloses the use of a module to record the behavior of the system being analyzed ("*information logger*")(Hunt, Col 37, Lines 40-59), Hunt does not disclose the referencing of instructions for saving a start time marker upon the start of the instrumented function or saving a stop time marker upon completion of execution of the instrumented function.

10. Burdick discloses instrumenting functions by placing start and stop Application Programming Interface (API) calls at the start and end of a function, respectively in order to gauge the response time of the function (Burdick, Col 3, Line 57 – Col 4, Line 2).

11. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the method disclosed by Hunt's with the teachings of Burdick in order to gauge the response time of the system upon which the method was implemented. By measuring the latency of the execution of functions on the network,

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one would be able to better organize the distribution of the system to achieve optimum efficiency in executing tasks (Hunt, Col 24, Line 19-Col 26, Line 2) (Burdick, Col 1, Lines 14 – 34).

12. As per **Claim 2**, Burdick further discloses the registering of the invoked method with an Application Response Measurement (ARM) agent (Col 3, Line 57 – Col 4, Line 2)(*The ARM API requires that, before an application can begin making requests to start and stop recording the execution time of a function, the application must register the application with an ARM agent*).

13. As per **Claim 3**, Burdick further discloses invoking the ARM agent for recording the start of the function requested of the COM object (Col 3, Line 57 – Col 4, Line 2)(*The ARM API forwards requests to record the start time of a function to ARM agents within the system*).

14. As per **Claim 4**, Burdick further discloses invoking the ARM agent to record the ending of the function requested of the COM object (Col 3, Line 57 – Col 4, Line 2)(*The ARM API forwards requests to record the stop time of a function to ARM agents within the system*).

15. As per **Claim 5**, Hunt further discloses wherein the wrapper COM object containing a data structure for storing the number and type of arguments associated

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with the requested COM object (*Col 45, Line 63 – Col 46, Line 30 and Figure 17, element 706*).

16. As per **Claim 6**, Hunt further discloses wherein said wrapper object comprises a reference pointer for referring to said requested COM object (*Col 45, Line 46 – Col 46, Line 30 and Figure 17, element 706*).

17. As per **Claim 7**, Hunt further discloses wherein said wrapper object comprises a pointer referring to said universal interface (*Col 8, Lines 22 – 49, Figure 3; Col 45, Line 63 – Col 46, Line 30 and Figure 17*)(*The universal interface is the virtual function table of the wrapper interface*).

18. As per **Claim 8**, Hunt further discloses wherein a policy that indicates whether to perform the step of generating a wrapper COM object corresponding to the requested COM object (*Col 47, Lines 9-19*).

19. As per **Claim 9**, Hunt further discloses wherein said policy being applied to a requested proxy object, a COM object belonging to an MTS package, and a COM+ object (*Col 7, Line 66- Col 8, Line 12; Col 11, Lines 5-51; and Col 47, Lines 9-19*) (Hunt discloses that the disclosed method for wrapping a COM object can be used for any COM component technology (COM, COM+, DCOM). Since a the package that a COM object belongs to is irrelevant as to the possibility of it being wrapped, COM objects that

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are a part of an MTS package is encompassed by Hunt's disclosure. Further, since they are accessed in a similar manner to a virtual function that is a part of a COM object, proxies can be instrumented in the same manner. Since the policy for wrapping applies to all objects that are being instrumented through wrapping, the policy would then apply to proxy objects, COM objects that belong to the MTS package, and COM+ objects).

20. As per **Claim 10**, Hunt further discloses wherein storing said policy in a tabular format in a registry of a system on which said COM objects are executed (*Col 47, Lines 9-19*)(*The hash table serves as the registry for storing information concerning what objects have and have not been wrapped. This information allows the COIGN system to determine what objects should or should not be wrapped*).

21. As per **Claim 11**, Hunt further discloses wherein the step of intercepting a request comprises patching code associated with one or more selected system functions (*Col 31, Lines 45-52*).

22. As per **Claim 12**, Hunt further discloses wherein the functions are provided in a dynamic link library (*Col 29, Line 66 – Col 30, Line 8 and Col 31, Lines 45-52*).

23. As per **Claim 15**, Hunt further discloses wherein the utilization of hooks associated with said system functions to refer to a program for patching said system

functions (Hunt, Col 37, Line 34 – Col 38, Line 16) (Hunt states that the COIGN runtime environment, the system for instrumenting COM objects and adding additional functionality to said instrumented objects, is implemented using COM objects to which other COM objects can be added or removed to change the functionality of the system. These objects serve as the hooks for the system).

24. As per **Claim 16**, Hunt further discloses wherein said hooks comprise a designated string stored in the system registry (Hunt, Col 37, Line 34 – Col 38, Line 16)(COM objects, of which Hunt's hook comprise, contain entries in a registry to allow the operating system to load said modules when requested by an application requesting to load said modules into memory).

25. As per **Claim 17**, Hunt further discloses wherein the patching of system functions comprises replacing selected bytes in a code with a jump instruction to a code creating said requested COM object and generating the wrapper object (Hunt, Col 41, Lines 41-56 and Figure 14).

26. As per **Claim 18**, Hunt further discloses wherein copying instructions in said system function code corrupted by said jump instruction to an allocated data area (Hunt, Col 41, Lines 41-56 and Figure 14).

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27. As per **Claim 19**, Hunt further discloses wherein decoding said selected bytes prior to their replacement by said jump instruction to determine the total number of bytes corresponding to instructions corrupted by said inserted jump instruction (Hunt, Col 41, Lines 41 – Col 42, Line 4 and Figure 14)(*The instructions must be decoded in order to determine their length and, therefore, determine how much has to be copied to the new data area*).

28. As per **Claim 21**, Hunt does not disclose one of the monitoring agents being in communication with an ARM agent.

29. Burdick discloses the use of the ARM API to collect the start and stop times of a function by communicating with an ARM agent (Burdick, Col 3, Line 57 – Col 4, Line 2)(*The ARM API requires that, before an application can begin making requests to start and stop recording the execution time of a function, the application must register the application with an ARM agent*).

30. One of ordinary skill in the art at the time of invention would have knowingly combined the teachings of Burdick with Hunt's method in order to gauge the response time of the system upon which the method was implemented. By measuring the latency of the execution of functions on the network, one would be able to better organize the distribution of the system to achieve optimum efficiency in executing tasks (Hunt, Col 24, Line 19-Col 26, Line 2) (Burdick, Col 1, Lines 14 – 34).

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31. As per **Claim 22**, Hunt further discloses the virtual function executing the method invoked by the client (Hunt, Col 45, Lines 46-62 and Figure 17).

32. While Hunt further discloses the use of a module to record the behavior of the system being analyzed ("information logger")(Hunt, Col 37, Lines 40-59), Hunt does not disclose the referencing of instructions for saving a start time marker upon the start of the instrumented function or saving a stop time marker upon completion of execution of the instrumented function.

33. Burdick discloses instrumenting functions by placing start and stop Application Programming Interface (API) call at the start and end of a function, respectively (Burdick, Col 3, Line 57 – Col 4, Line 2).

34. One of ordinary skill in the art at the time of invention would have knowingly combined the teachings of Burdick with Hunt's method in order to gauge the response time of the system upon which the method was implemented. By measuring the latency of the execution of functions on the network, one would be able to better organize the distribution of the system to achieve optimum efficiency in executing tasks (Hunt, Col 24, Line 19-Col 26, Line 2) (Burdick, Col 1, Lines 14 – 34).

Response to Arguments

35. Regarding the objections made in the last office action to the specification, drawings, abstract, and claims, they are withdrawn in light of Applicants' amendments.

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36. Regarding the 35 U.S.C. 112, second paragraph and forth paragraph rejections of **Claim 8** made in the last office action, they are withdrawn in light of Applicants' amendments.

37. Applicant's arguments have been fully considered but they are not persuasive in regard to the prior art rejections of all claims.

38. As per the 35 U.S.C. 102(b) rejection of **Claim 20**, Applicants argue that Hunt fails to show "generating a wrapper object corresponding to the requested COM object" (See, Applicants' Remarks at 11). However, as indicated by Hunt in col. 38, lines 23-33, the Runtime Executive (RTE) is explicitly stated as being responsible for wrapping interfaces and managing those wrappers in the COIGN system. In fact, Hunt discusses this fact throughout numerous portions of the cited reference. Applicants are reminded that rejections are based on the entire reference and that portions of the reference are cited for Applicants' convenience.

39. Applicants further argue that Hunt merely shows a COM object and that, therefore, the virtual function table cited by Examiner cannot constitute a "universal interface". However, in the portions of Hunt cited in the above rejection of the claim, Hunt clearly states that the wrappers used by the COIGN system are, in fact, modified COM objects in which the virtual function table is modified to point function calls to the instrumentation functions before being directed to the originally requested functions. To

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the requesting client, the wrapper is accessed in the exact same manner as the intended COM object would, with index numbers being used to access the virtual function table. Since that virtual function table is capable of pointing to any function (as is a normal COM object virtual function table) and is accessed with indexes, it certainly constitutes a "universal interface", as claimed by Applicants.

40. For the reasons cited above, Examiner maintains the rejection of **Claim 20**. Since **Claims 1-12, 15-19, and 21-23** were argued on for the same reasons as **Claim 20**, Examiner maintains the prior art rejections of **Claims 1-12, 15-19, and 21-23**.

Conclusion

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


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42. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Pantoliano Jr whose telephone number is (571) 270-1049. The examiner can normally be reached on Monday-Thursday, 8am - 4 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William D. Thomson can be reached on (571)272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RP
3/07/2007


MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100